

Wisconsin State Park System

Nature Discovery Kit

Terrific Trees!



What's In The Kit?

Inside each virtual kit, you'll find lots of fun things to do while exploring the great outdoors.

Every two weeks, there will be a different topic and activities for you to do outside whether it's in your backyard, at a local county park or at one of our many Wisconsin State Park System properties.

Download the current kit then head outside to have some fun.

Here's What You'll Find in this Week's Kit:



Introduction - Find out what happens to trees in the spring.

Go Outside - Download fun scavenger hunts and experiments for outdoor exploring.

Discover - Learn about maple sugaring.

Crafts - Use simple household items to create crafts and art.

Snacks - Make tasty tree snacks.

Stories - Check out tree story books.

Live Lightly - Join the Green Wave.

Journal - Print this week's journal page and tell us about your adventures.

Share The Fun!

Share photos of your crafts, snacks, journal pages and your exploration finds (and check out what others are doing, too) by using #OutWiGo on social media.

Terrific Trees

How Do Trees Know It's Spring?



Is It Spring?

Spring is around the corner. Soon trees will green with new growth. How do they know that it's spring and time to grow?

Trees become dormant in the winter to survive freezing temperatures and lack of water. Check out a branch of a tree that lost its leaves - a deciduous tree. Look for a teardrop-shaped “bump” on the branch. Those bumps are buds and will become the new leaves or flowers. The new growth is protected from winter’s cold by hard scales. The bud is full of sugars that work like antifreeze to protect it as temperatures drop.



As the days get warmer and there are longer periods of sunlight, trees go through a series of subtle changes to “wake themselves up” from their wintertime rest. One change, the melting snow, helps to wake it up. The tree’s dark bark absorbs heat from the sunlight, melting the snow around its base. As the ground thaws, water and nutrients flow into the tree’s roots and mixes with starches and sugars that have been stored. This mix of water, sugars and starch, called sap, starts moving under the bark up into the branches. The upward movement of sap will continue if temperatures fluctuate above freezing during the day and below freezing at night. This spring sap flow in sugar and other maples is what people collect to boil into maple syrup. As the sap continues to flow, it provides the nutrients needed for the leaves and flowers, hidden inside the buds, to grow. Once a tree's leaves are fully grown, they will synthesize sugars using sunlight, carbon dioxide and water in the process called photosynthesis.

Have fun watching the trees change from being empty to full of leaves!

Terrific Trees

ID Those Leafless Trees

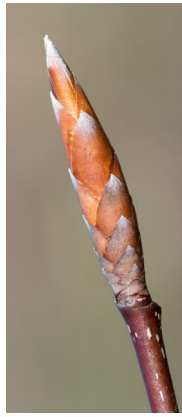
Tree Bud ID

Even though the leaves aren't out on the deciduous trees, you can still identify the tree type by looking at the buds. See how many of these trees you can find by just looking at their buds. To learn how to identify trees by their buds, download UW-Steven's Point [Winter Tree Key](#). Find out how to use a dichotomous key to [identify trees](#) on the EEK! website.

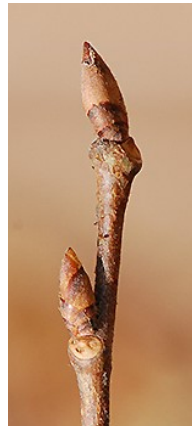
American Basswood
Tilia americana



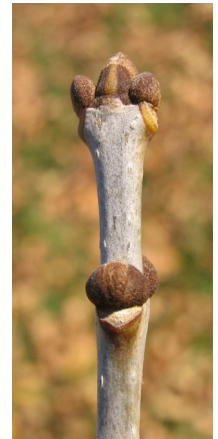
American Beech
Fagus grandiolia



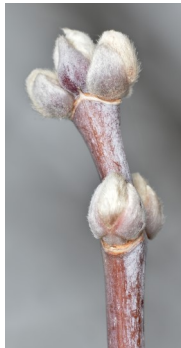
American Elm
Ulmus americana



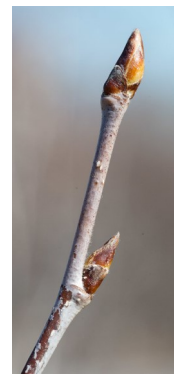
White Ash
Frazinus americana



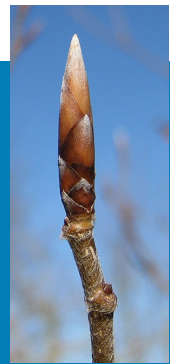
Sugar Maple
Acer saccharum



Box Elder
Acer negundo



Yellow Birch
Betula allenghaniensis



What Is A Tree Bud?

The buds you find on a tree are little packages of miniature leaves, branches and sometimes flowers. The buds remain on trees all winter, tightly closed. Their contents protected from the elements, by modified leaves called bud scales. In the spring, their buds swell, scales fall off and you see the new leaves and flowers growing.

Terrific Trees

Spring Tree Bingo



Terrific Trees

How Old Is That Tree?

How do you find out how old a tree is? After a tree is cut down, you can count the trunk "rings" to determine how old it was, but what about when a tree is alive?

What You Need:

- Tree
- Rope
- Measuring tape, ruler or yardstick
- Helper

What To Do:

- 1) Find a tree that is at least as tall as a grown-up or taller.
- 2) Wrap a rope around the widest part of the trunk. The distance around the trunk of a tree is called the *circumference*.
- 3) Use a measuring tape, ruler or yardstick to measure the rope to determine the circumference of the trunk.
- 4) The measurement is approximately the age of the tree. Generally each inch (2.5cm) represents one year of growth.



Did You Know?

Some tree species such as pines, spruces and firs grow a spiral (whorl) of branches each year. Count the number of whorls of branches to find out the age of the tree!

Terrific Trees

Maple Sugaring

Late winter and early spring marks the time to tap maple trees to make syrup. Check out what's happening to understand how we get one of our favorite breakfast treats!



Sweet Sap

During the summer, the leaves use carbon dioxide, water, and sun light to make a kind of sugar. This makes the sap we tap taste sweet.

Up, Up The Xylem

The sap starts to flow in the tree. A pipeline of thick-walled cells in the tree, called xylem, delivers water and nutrients from the roots to the branches. The movement of sap in trees involves pressure differences between the roots and the branches.

Boiling The Sap

It takes 40 gallons of sugar maple sap to produce 1 gallon of syrup. When water starts boiling, it's turning from a liquid (water) to a gas (water vapor). The water vapor evaporates into the air leaving less water in the pot. As more and more water leaves the pot, the concentrated sugar solution is called syrup.

Native American Names

Ho-Chunk

Sugar Maple Tree – Nąąsak

Maple Sugar – Nąą
taanjžu

Maple Syrup – Nąą
taanjžu ziizip

Menominee

Sugar Maple - na sōpomāhtek

Maple Syrup - sōpomāhtek-
sēwākametaew

Maple Sugar - ni sōpomāhtek-
sōpomah

Oneida

Sugar Maple Tree - wahta'

Maple Syrup - ohse's

Maple Sugar - otsi'?khe;?ta'

Terrific Trees

Manabozho And The Maple Trees

An Anishinaabe Legend

A very long time ago, when the world was new, Gitchee Manitou made things so that life was very easy for the people. There was plenty of food, the weather was always good, and the maple trees (ziinzibaakwadwaatig) were filled with thick sweet syrup (zhiiwaagamizigan). Whenever anyone wanted to get maple syrup from the trees, all they had to do was break off a twig and collect it as it dripped out.

One day, Manabozho went walking around. "I think I'll go see how my friends the Anishinaabe are doing," he said. So, he went to a village of Indian people. But, there was no one around. So, Manbozho looked for the people. They were not fishing in the streams or the lake. They were not working in the fields hoeing their crops. They were not gathering berries. Finally, he found them. They were in the grove of maple trees near the village. They were just lying on their backs with their mouths open, letting maple syrup drip into their mouths.

"This will NOT do!" Manabozho said. "My people are all going to be fat and lazy if they keep on living this way."

So, Manabozho went down to the river with a birch bark basket. He brought back many buckets of water. He went to the top of the maple trees and poured water in, so that it thinned out the syrup. Now, thick maple syrup no longer dripped out of the broken twigs. What came out was thin and watery and just barely sweet to the taste.



"This is how it will be from now on," Manabozho said. "No longer will syrup drip from the maple trees. Now, there will only be this watery sap. When people want to make maple syrup (zhiiwaagamizigan) or maple sugar (ziinzibaakwad), they will have to gather many buckets full of the sap in a birch bark basket like mine. They will have to gather wood and make fires to heat stones to drop into the baskets. They

will have to boil the water with the heated stones for a long time to make even a little maple syrup. Then my people will no longer grow fat and lazy. Then they will appreciate this maple syrup Gitchee Manitou made available to them. Not only that, this sap will drip only from the trees at a certain time of the year. Then it will not keep people from hunting and fishing and gathering and hoeing in the fields. This is how it is going to be," Manabozho said. And, that is how it is to this day. Source: native-languages.org/ojibwestory.htm

Terrific Trees

Tree Shape Hunt

Tree Habits

Can you identify the trees in your neighborhood? The shape, or silhouette, of a tree is called a habit. As you go outside on your adventures, see how many of these tree habits you can find.



Round



Spreading



Weeping



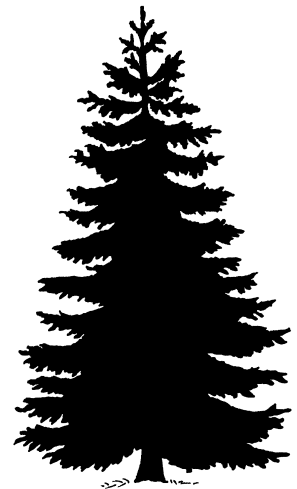
Irregular



Oval



Conical



Pyramidal

Terrific Trees

Bark Art

What You Need:

- Crayons
- Paper
- Trees

What To Do:

- 1) Remove any paper that is around the crayon.
- 2) Find a tree with interesting bark.
- 3) Hold the paper against the bark. Rub the long edge of the crayon against the paper. You may need to press harder to capture the bark's interesting features.
- 4) If you know what type of tree it is, write what it is on the paper.
- 5) Repeat steps 2-3 with different trees to compare their bark texture.



Leaf Rubbings

Once the leaves are out on the trees, you can make leaf rubbings.

- Place the leaf on a table, bumpy-side up.
- Place a piece of paper over the leaf.
- Rub the long edge of the crayon over the paper.
- Repeat with different types of tree leaves.

Terrific Trees

Shadow Art

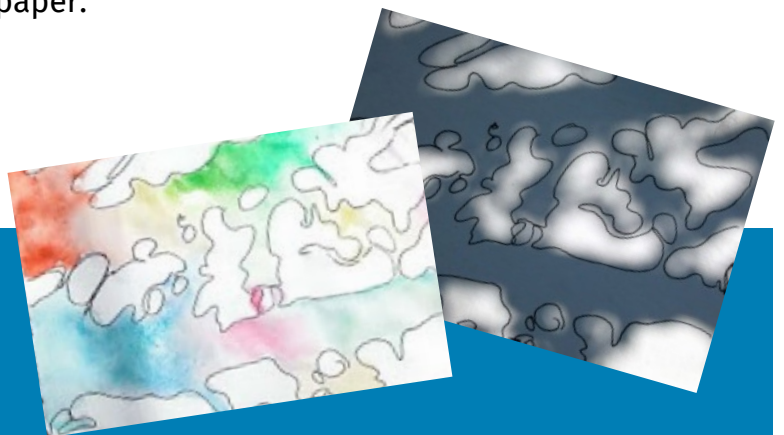
What You Need:

- Large piece of paper
- Paint brushes
- Pen or pencil
- Sunny day
- Paints or markers

What To Do:

- 1) Lay your large piece of paper under the shadow of a tree.
- 2) Trace the tree's shadow onto your paper.
- 3) Use paint or markers to create an art piece from your tree's shadow.

If you are struggling to trace your tree's shadow on the lumpy ground, place board underneath your paper.



More Shadow Art

- Place a piece of paper in the dappled sunlight coming through a tree's branches.
- Trace the around the patches of sunlight.
- Use markers or watercolor paints to color in the shapes created by the shadows.

Terrific Trees

Branch Frames

What You Need:

- Wooden photo frame, glass and backing removed (Check thrift stores or make your own.)
- Photo hanger
- Branches—dead and down on the ground
- Hot glue gun with glue sticks
- Pruners

What To Do:

- Choose some branches and trim them to exact size of your frame. Use a variety of branch types, widths and shapes. Make sure you don't crowd the branches in the frame.
- Glue your branches to the top and bottom of the frame.
- Attach a photo hanger to the back of frame.



Did You Know?

A comprehensive study of the world's plants found 60,065 tree species growing on the earth. Most of these trees are found in Brazil, China and Indonesia, but 800 tree species are found in North America. More than 50 species of trees can be found growing in Wisconsin.

Terrific Trees

Who Are The Trees In Your Neighborhood?

Adopt A Tree

Find a tree in your neighborhood, yard or local park to adopt. Give your tree a special name and visit your tree several times throughout the year to watch it grow and change.



What To Do:

- Find a tree that you find interesting. This can be in your yard, neighborhood, local park or anywhere!
- Each time you visit your tree, check out the tree's shape, bark, height, smell, leaves, buds and seeds. Some of these items you'll only find at specific times of the year.
- Look for any animals or signs of animals living in or around your tree. Use a magnifying glass or the camera on your phone to look for very small insects living on your tree.
- Listen to your tree. Put your ear on the trunk. Do you hear anything?
- Make a rubbing of the bark and leaves of your tree. (See page 11 in this kit to learn how.)
- Take a picture of you and your tree each time you visit.



Make A Tree Journal

Make a tree journal of your adopted tree. You can use a notebook or make your own homemade journal to place your pictures, drawings and items you collect from your tree. Look through your journal pages to see how your tree has changed throughout the year.

Terrific Trees

Pinecone Photo Holder

What You Need:

- Twigs
- Acorns, hickory nuts, black walnuts
- Pinecones of various sizes
- Scrap cardboard (e.g., old cereal box, shipping box)
- Scissors
- Hot glue gun with glue sticks

What To Do:

- 1) Head outside to collect twigs, nuts and cones. Make sure you're allowed to take them from the place you find them. Bring them inside and put them in a place to dry.
- 2) Arrange the dried cones, twigs and nuts to create a design you like. At the center of your design, place a larger cone on its side.
- 3) Cut a piece of scrap cardboard to match the shape of your design's base.
- 4) With adult help, hot glue your design pieces to the cardboard and to each other.
- 5) To display a photo, place it in between the cone's scales.



Pinecone Science

Place an open pinecone in jar of water. What do you think will happen? Check on the pinecone in 30-60 minutes. What did happen? Why did it happen?

Answer: The seeds can better disperse far from the mother tree in dry windy weather.

Terrific Trees

Tree Snacks

What You Need:

- Pretzel sticks
- Pretzel rods
- Pretzel twists
- Green grapes
- Knife
- Cutting board



What To Do:

- 1) Cut the grapes in half. These will become your tree's leaves.
- 2) Use a large pretzel rod for the trunk of the tree.
- 3) Use the pretzel twist to make the tree's branches.
- 4) Place the grape halves around the tree's branches to make the canopy.
- 5) Place a few pretzel sticks at the bottom of your tree's trunk to make the roots.

Tree Salad

What You Need:

- Variety of tree fruits (apples, oranges, cherries, plums, tangerines, pears, mangos, apricots, dates, etc.)
- Variety of tree nuts (walnuts, pecans, hickory nuts, black walnuts, pistachios, almonds, cashews, pine nuts, etc.)
- Shredded coconut
- Ground cinnamon, nutmeg and/or cloves
- Maple Syrup
- Bowl



What To Do:

Cut up the tree fruit into bite-sized pieces and put in a large bowl with your favorite tree nuts and shredded coconut. Sprinkle on cinnamon, nutmeg and/or cloves to your taste. Sweeten with a bit of maple syrup. Mix all together. Try different combinations until you find one you really like.

Terrific Trees

Tree Snack For The Animals

What You Need:

- Large eyed needles
- Yarn or string
- Scissors
- Bowls
- Cookie cutters
- Food items - stale bread, dried cranberries, popcorn, Cheerios, salt-free peanuts

What To Do:

- 1) Organize the food items into various bowls.
- 2) Use the cookie cutters to cut shapes out of the stale bread.
- 3) Thread a needle with a three-foot piece of yarn or string. Tie a peanut onto one end. This will keep the other items from falling off.
- 4) Thread food items onto the string to create garland. Tie off the end with another peanut.
- 5) Hang your garland on a tree where you can watch what animals come visit the garland for a snack.

Remember NOT to use salted food items; these will dehydrate the animals.



Fruit Garland

Make another snack for the animals using a variety of fruit. Birds especially like these types of garlands! Cut up any pieces fruit into smaller pieces then thread them onto a 6 to 12-inch piece of yarn or string. Hang on a tree and see what birds or other animals eat your fruit garland snack.



Terrific Trees

Terrific Trees Resources

Tree Books

Are Trees Alive? by Debbie Miller

Have You Seen Trees by Joanne Oppenheim

Hello Tree by Joanne Ryder

Meeting Trees by Scott Sanders

Be a Friend to Trees by Patricia Lauber

The Grandad Tree by Trish Cooke

Mary Margaret's Tree by Blair Drawson

Mighty Tree by Dick Gackenbach

My Mother Talks to Trees by Doris

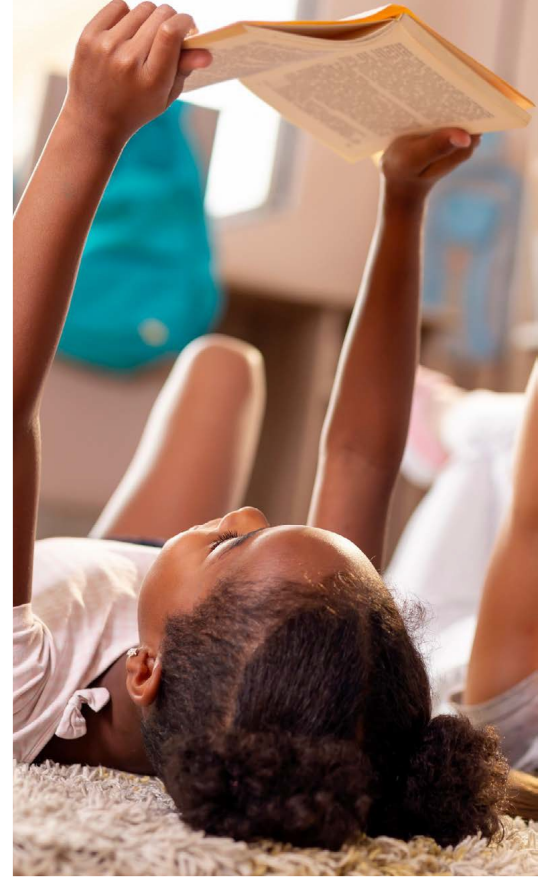
Sugar Time by Kathryn Lasky

Maple Moon by Connie Brummel Cook

From Maple Trees to Maple Syrup by Kristin Thoennes Keller

Sugarbush Spring by Marsha Wilson Chall

Maple Syrup Season by Ann Purnell



Tree Reference Books

Tell Me, Tree: All About Trees For Kids by Gail Gibbons

Trees, Leaves, & Bark by Diane Burns

Winter Tree Finder by May Theilgaard Watts and Tom Watts

Forest Trees of Wisconsin: How to Know Them by Wisconsin Department of Natural Resources

Virtual Videos

Gather [maple syrup](#) the traditional Anishinaabe way.

How to make maple syrup and the [science](#) behind it.

Learn about [trees](#).

Guess that [evergreen tree](#)!

Learn how to use a dichotomous [tree key](#).

Terrific Trees

Nature's Notebook

Join The Green Wave

Nature's Notebook invites you to join us in tracking the "green wave", the flush of green that accompanies leaf-out, over the course of the spring season, as well as the spread of seasonal color across the country in the autumn.

Observations of these trees are of extra importance because they can help decision-makers develop forecast models and early warning systems for use in forest management and public health administration via pollen forecasting. In fact, researchers are already using data that have been reported for these species to [validate models](#) that predict how changes in climate will impact phenology of trees, and also to learn that [deciduous trees may leaf out weeks earlier under climate warming](#).



How to Participate

- 1) Visit [Nature's Notebook](#) and create an account.
- 2) Sign up to receive our [Green Wave](#) campaign messages. You'll receive messages approximately every 4-6 weeks during the growing season: encouragement, observation tips, interesting links and campaign-specific opportunities.
- 3) Select one (or more) individual maple, oak, or poplar trees to track from the [list of trees](#) on the website.
- 4) Take observations. Track leaf out in your trees ideally 2-4 times a week, in the spring and autumn color change. Green wave is especially interested in volunteers tracking the following phenophases - flowers or flower buds, open flowers, pollen release, colored leaves and falling leaves.
- 5) Report your observations. As you collect data during the season, log into your *Nature's Notebook* account and enter the observation data you recorded. You can also use their [smartphone apps](#) to submit your observations!



Wisconsin State Park System

Nature Discovery Kit

Tell Us About Your Adventures!

Use this page to draw and write about what you found while discovering the trees in your nature place this week.